

$^{28}\text{Si}(^{36}\text{Ar}, 2\alpha n\gamma)$  1997Ru07

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Balraj Singh	ENSDF	30-Apr-2022

1997Ru07 (also 1998Ru02):  $E(^{36}\text{Ar})=143$  MeV. Measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin, (particle) $\gamma$ -coin,  $\gamma(\theta)$ , and  $\gamma\gamma(\theta)$ (DCO) using Gammasphere array with 82 Ge detectors,  $4\pi$  CsI Microball and 15 liquid scintillators for neutrons at Lawrence Berkeley National Laboratory. Observed high-spin states in the  $T_z=-1/2$   $^{55}\text{Ni}$ .

1996Ca48: possible yrast level in  $^{55}\text{Ni}$  proposed at 2796 keV in  $^{40}\text{Ca}(^{19}\text{Ne}, p3n\gamma), E=70$  MeV reaction through the observation of a 2796-keV  $\gamma$  ray at CYCLONE 30 cyclotron of Louvain-la-Neuve. However, no such  $\gamma$  ray was seen by 1997Ru07. Due to the tentative assignment of the 2796-keV  $\gamma$  ray, this is not included in the Adopted Levels.

Additional information 1.

 $^{55}\text{Ni}$  Levels

$E(\text{level})^\dagger$	$J^\pi^\ddagger$	Comments
0 <sup>#</sup>	$7/2^-$	
2882 <sup>#</sup> 2	$(11/2^-)$	1997Ru07 point out that a tentative ground state transition (2796 keV) in the yrast decay reported by 1996Ca48 does not correspond to the 2882 transition observed in their work.
3583? <sup>#</sup> 2	$(13/2^-)$	
3617 <sup>#</sup> 2	$(15/2^-)$	
4483? <sup>#</sup> 3	$(17/2^-)$	

<sup>†</sup> From  $E_\gamma$  data.

<sup>‡</sup> From 1997Ru07, based on comparison with level structure in mirror nucleus  $^{55}\text{Co}$ , and shell-model calculation.

<sup>#</sup> Seq.(A): Yrast sequence.

 $\gamma(^{55}\text{Ni})$ 

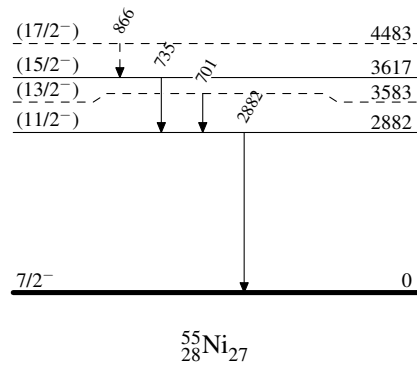
$E_\gamma^\dagger$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$
701 1	3583?	$(13/2^-)$	2882	$(11/2^-)$
735 1	3617	$(15/2^-)$	2882	$(11/2^-)$
866 <sup>‡</sup> 1	4483?	$(17/2^-)$	3617	$(15/2^-)$
2882 2	2882	$(11/2^-)$	0	$7/2^-$

<sup>†</sup> From 1997Ru07.

<sup>‡</sup> Placement of transition in the level scheme is uncertain.

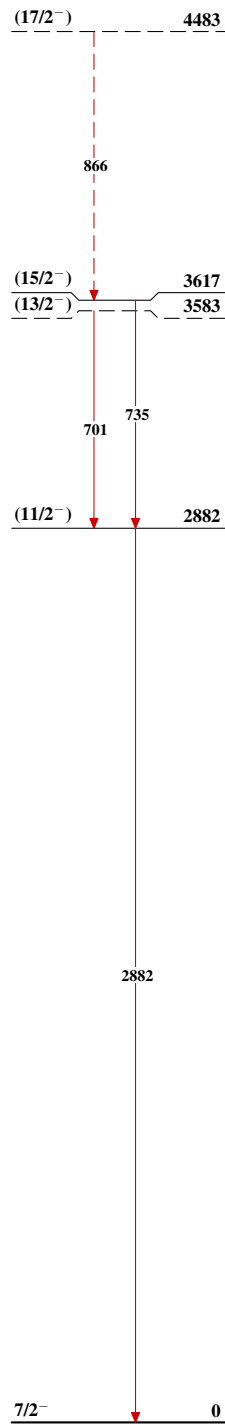
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Legend

Level Scheme-----►  $\gamma$  Decay (Uncertain)

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Seq.(A): Yrast sequence

 $^{55}_{28}\text{Ni}_{27}$